

General Description

The CMSA055N06 uses advanced technology to provide excellent RDS (ON) . This device is suitable to be used as the low side FET general purpose.

Features

- $R_{DS(ON)} < 5.5\text{m}\Omega$ @ $V_{GS}=10\text{V}$
- 100% avalanche tested
- Small Footprint (5x6mm) for Compact Design
- RoHS Compliant

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D @ T_C = 25^\circ\text{C}$	Continuous Drain Current	90	A
$I_D @ T_C = 100^\circ\text{C}$	Continuous Drain Current	66	A
I_{DM}	Pulsed Drain Current	360	A
EAS	Single Pulse Avalanche Energy ¹	156	mJ
$P_D @ T_C = 25^\circ\text{C}$	Total Power Dissipation	100	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	---	31.3	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction -Case	---	1.25	$^\circ\text{C/W}$

Product Summary

BVDSS	RDS ON	ID
60V	5.5m Ω	90A

Applications

- DC-DC Converter
- Motor Drive
- Powertrain Management

DFN-8 5x6 Pin Configuration



Type	Package	Marking
CMSA055N06	DFN-8 5*6	CMSA055N06

N-Channel Enhancement Mode Field Effect Transistor

Electrical Characteristics ($T_J=25^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V$, $I_D=250\mu A$	60	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V$, $I_D=28A$	---	4.1	5.5	m Ω
		$V_{GS}=4.5V$, $I_D=20A$	---	6.7	8	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS}=V_{DS}$, $I_D=250\mu A$	1	---	3	V
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=60V$, $V_{GS}=0V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V$, $V_{DS}=0V$	---	---	± 100	nA
Q_g	Total Gate Charge	$V_{DS}=30V$, $I_D=21A$ $V_{GS}=10V$	---	26	---	nC
Q_{gs}	Gate-Source Charge		---	8	---	
Q_{gd}	Gate-Drain Charge		---	9	---	
$T_{d(on)}$	Turn-On Delay Time	$V_{DS}=30V$, $V_{GS}=10V$, $I_D=10.5A$ $R_{GEN}=4.7\Omega$	---	16	---	ns
T_r	Rise Time		---	18	---	
$T_{d(off)}$	Turn-Off Delay Time		---	25	---	
T_f	Fall Time		---	7	---	
C_{iss}	Input Capacitance	$V_{DS}=25V$, $V_{GS}=0V$, $f=1MHz$	---	1700	---	pF
C_{oss}	Output Capacitance		---	750	---	
C_{rss}	Reverse Transfer Capacitance		---	80	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Diode continuous forward current	$V_G=V_D=0V$, Force Current	---	---	90	A
$I_{S,pulse}$	Diode pulse current		---	---	360	A
V_{SD}	Diode Forward Voltage	$V_{GS}=0V$, $I_F=28A$, $T_J=25^{\circ}\text{C}$	---	---	1.2	V

Note :

1.The EAS data shows Max. rating .The test condition is $V_{DS}=40V$, $V_{GS}=10V$, $L=0.5mH$, $I_{AS}=25A$.

This product has been designed and qualified for the consumer market.

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Cmos reserves the right to improve product design ,functions and reliability without notice.

N-Channel Enhancement Mode Field Effect Transistor

Typical Characteristics

